Installation and Maintenance Instructions

Model SGV/DGV

SGV (Single Wall) & DGV (Double Wall) Special Gas Vent System

Special Gas Vent (USA) / Type BH Vent Class I/II (Canada)

For Venting Residential, Commercial & Industrial Appliances
Category I,II,III and IV Appliances
3" - 4" Diameter Vents for use on Positive, Neutral and Negative Pressures up to 8" W.C. (DGV) and 9" W.C. (SGV)

IMPORTANT: Do not install this product until you have read and fully understand these installation instructions. Failure to comply with these instructions may result in an injury or property damage. An improper installation will void any stated warranty.

- Follow these instructions exactly as written.
- Examine all components for possible shipping damage prior to installation.
- This venting system must be free to expand and contract.
  This venting system must be supported in accordance with these instructions.
- Check for unrestricted vent movement through the walls, ceilings, and roof penetrations.
- Different Manufacturers Have Different Joint Systems and Seals.
  Do Not Mix Pipe, Fittings, or Joining Methods from Different Manufacturers.

Tested and Listed to
UL 1738 & ULC-S636
By Underwriters Laboratories, Inc

c UL us

⚠ WARNING

Failure to follow the installation instructions could cause FIRE, CARBON MONOXIDE POISONING, OR DEATH. If you are unsure of installation requirements, call the phone number listed on the instructions, 1.800.433.6341 or visit www.selkirkcorp.com.

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APPLICATION INFORMATION

Model SGV is a single wall Gas Vent System that may be used to vent safety certified Category I, II, III and IV and gas fired appliances with a flue gas temperature of not more than 550° F (288° C). SGV system is for use with appliances that produce positive vent pressures of 9 inches of water column or less. Because these types of appliances may produce vent gases under positive pressure and/or at or near their dew point, special installation considerations may be required.

Model DGV is an advanced concentric vent system designed for close clearance installation in residential and light commercial applications. The double-wall construction of Model DGV allows the system to be fully enclosed by combustible materials at zero or 1-inch clearance depending on orientation and flue gas temperature. DGV may be used on negative, neutral, and positive pressure systems up to 8 inches w.c.

Model DGV is approved for use on ANSI Category I, II, III, and IV Gas Fired Appliances and certain Direct Vent appliances. SDG and DGV are appropriate for use on appliances that specify a UL1738 or ULC-S636 Listed Venting System.

As a Sealed Combustion System: The unique concentric design of DGV also allows it to function as a pipe-in-a-pipe vent. Products of combustion are exhausted out through the inner wall while combustion air is drawn in through the annular space between the inner and outer wall. An appliance can be direct-vented with only a single penetration through the building structure. **This application must be approved by the Appliance Manufacturer.**

Install SGV & DGV in accordance with these instructions and those of the appliance manufacturer. Consult the appliance manufacturer's instructions for the maximum length of the vent connector as well as any restriction on total vent height, proper sizing of the vent, common venting considerations and procedures for connecting the vent to the appliance.

The installation must conform to applicable National, International, Regional, State and local codes. Contact the Authority Having Jurisdiction prior to beginning any work to obtain any required permits.

Note: Models SGV and DGV includes an integral seal and does not require RTV sealant. However, sealant may be necessary when connecting components directly to certain appliance flue collars.
For applications up to 570°F/288°C, approved sealants include GE RTV 106 and Dow Corning 736.
For applications up to 300°F/149°C, approved sealants include GE RTV 106 and Dow Corning 732.

Pre-Installation Considerations:

Proper planning prior to installation is essential for maintaining proper clearances and for avoiding possible contact with concealed plumbing or electrical wiring inside walls, floors and ceilings. A continuous straight-line pitch of at least 1/4 inch (2 degrees) rise per foot on horizontal runs must be maintained in order to properly rid the system of the corrosive condensate. Be sure to plan a sufficient number of supports for the entire system to maintain the required straight-line pitch and to hold the system in place. Where the vent is enclosed within a chase, the enclosures should be built to permit future inspection of the system.

Personal Safety

Wear eye protection and heavy gloves throughout the installation. In addition, wear an approved dust and vapor respirator whenever in contact with building insulation. Proper and safe scaffolding and/or ladders should be used. Check overhead for antennas, power lines or other obstacles before erecting ladders or scaffolding and while working with conduit on any roof structure.

Tools Required for Installation

Common building tools including but not limited to a Tape Measure, Pliers, Screw Drivers, Saws and/or Snips, Drills, Drop Cloth(s); Ladder/Scaffold; Safety and Personal Protective Clothing.

Definitions:

Category I Appliance - An appliance which operates with a non-positive vent static pressure and with a vent gas temperature that avoids excessive condensate production in the appliance.

Category II Appliance - An appliance which operates with a non-positive vent static pressure and with a vent gas temperature that may cause excessive condensate production in the appliance.

Category III Appliance - An appliance that operates with a positive vent static pressure and with a vent gas temperature that avoids excessive condensate production in the appliance.

Category IV Appliance - An appliance that operates with a positive vent static pressure and with a vent gas temperature that may cause excessive condensate production in the appliance.

Combustible Material - Any material made of or surfaced with wood, compressed paper, plant fibers, or other materials that are capable of being ignited or burned. Such material shall be considered combustible even though it is flame proofed, fire-retardant treated, or plastered. (Source: NFPA54/ ANSI Z223.1-2006.).

N**on-Combustible Material** - is any material that is not capable of being ignited and burned, such material consisting entirely of, or a combination of, steel, iron, brick, tile, concrete, slate, asbestos, glass, and plaster. (Source: NFPA54/ANSI Z223. 1-1999.)

Clearance to Combustibles and Framing Requirements

Table 1 shows the required MINIMUM AIRSPACE CLEARANCE TO COMBUSTIBLES. “Combustibles” include framing lumber, drywall, plywood, paneling, insulation, wiring and other building materials. This airspace clearance is required for safe operation of the vent. Failure to follow these clearances could overheat the building materials and cause a fire.

Model	Diameter	Max Appliance Flue Gas Temp	Minimum Clearance to Combustible Material			
			Enclosed Vent		*Unenclosed Vent	
			Vertical	Horizontal	Vertical	Horizontal
SGV	3” & 4”	480°F	4”	8”	1”	1”
SGV	3” & 4”	550°F	4“	N/A	1”	1”
DGV	3” & 4”	550°F	0” (no offsets)	N/A	0”	1”
DGV	3” & 4”	330°F	0” (w/ offsets)	0”	0”	0”
DGV	3” & 4”	400°F	1” (w/ offsets)	1”	0”	0”
* = at least 1 side open. Combustible materials on a maximum of 3 sides						
Minimum Clearance to Non-Combustibles is 0" for Flue Gas temperatures up to 550°F - all configurations.						

Table 1 - Minimum Clearances to Combustibles and Non-Combustibles

Vertical (Floor, Ceiling and Roof) Penetrations

Where the vent passes through a floor, ceiling or roof the hole size or framing dimension must maintain minimum clearances per Table 1. Floor and Ceiling penetrations require a Fire Stop be installed. See Fire Stop section for installation instructions.

Horizontal (Wall) Penetrations

All horizontal systems passing through a combustible wall require the use of a Wall Thimble. See Table 2 for proper framing dimensions and refer to Wall Thimble section for installation instructions. **Non-combustible wall penetrations do not require a Wall Thimble.**

Model	Diameter	Minimum Framing Dimensions
		Wall Thimble
SGV	3” & 4”	6.5” x 6.5”
DGV	3”	5” + (2 x Clearance From Table 1)
DGV	4”	7” + (2 x Clearance From Table 1)

Table 2 - Minimum Framing Dimensions

TYPICAL INSTALLATION CONFIGURATIONS (SGV and DGV)

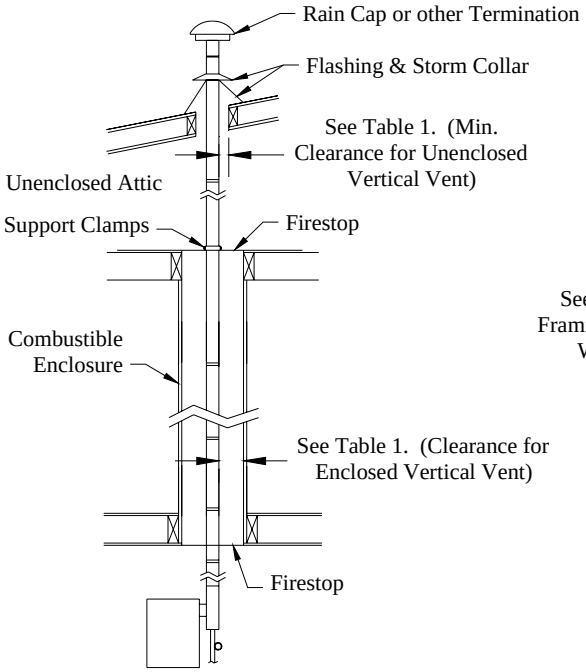


Fig 1. (Vertical Termination)

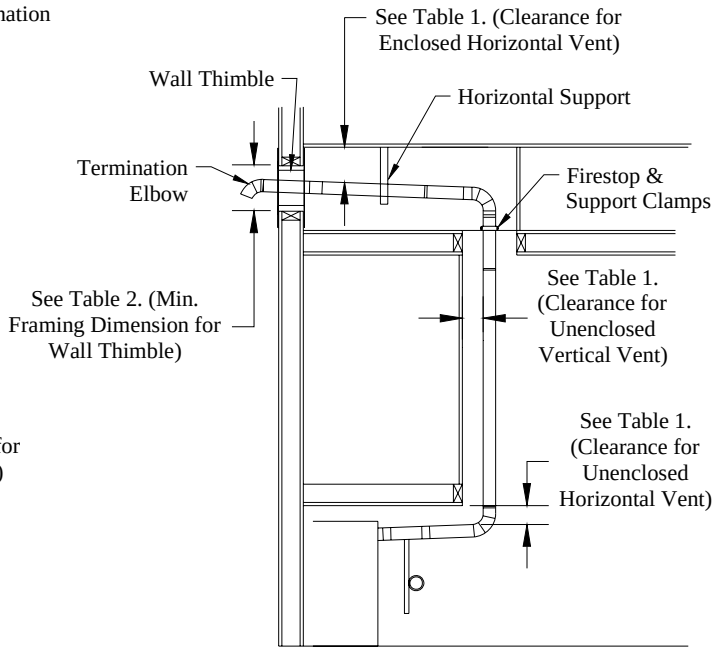


Fig 2. (Horizontal Termination)

NOTE: Models SGV and DGV may be intermixed in the same system as long as proper adapters are used and proper clearances are maintained for respective components.

In addition to the configurations shown in Figs. 1 & 2, this system may be installed in any combination of vertical and horizontal, enclosed and unenclosed configurations as long as minimum clearances are maintained per clearance Tables 1 & 2 and the total length and number of fittings does not exceed the appliance manufacturers recommendations. This system may also be installed within an existing masonry chimney.

Notes:

1. Unenclosed systems require at least one side open (combustible material on maximum of 3 sides).
2. Reduced clearances may be attained by using noncombustible enclosures.
3. Do not place insulation in any required clearance spaces surrounding the vent system unless these instructions suggest otherwise and the insulation is specified or supplied.

VENT ROUTING LIMITATIONS - MAXIMUM EQUIVALENT LENGTHS

In order to insure the vent system is not overly restrictive to flow, refer to the maximum length of vent specified by the appliance manufacturer. In order to account for turns in the system (which cause additional resistance to flow) most manufacturers recommend using an "Equivalent Length" method of determining the limitations. Via such method, elbows and tees are assigned an "equivalent length" (in feet). If the sum of straight length segments and additional "equivalent lengths" (due to turns) exceeds the limit specified by the manufacturer, the routing is not permitted. See appliance manufacturer's instructions for additional information.

If the appliance manufacturer's instructions do not list equivalent lengths for standard fittings, use Table 3 to determine the Equivalent Length of the vent fittings.

GENERAL INSTALLATION REQUIREMENTS

1. In instances where the appliance manufacturer's specified clearances conflict with requirements in this document, the appliance manufacturer's instructions take precedence.
2. Failure to conform to any of these requirements may violate local, state, national or international codes as well as create conditions which may cause catastrophic property damage or personal injury. Failure to conform to any of these requirements will also void any warranties, stated or implied.
3. The horizontal vent connector must slope continuously toward an appliance drain, a drain fitting or tee, or the termination. The vent must be pitched at least 1/4 inch per foot so that any condensate is not retained in any part of the venting system.
4. If called for by the appliance manufacturer's instructions, a drain fitting must be located as close as possible to the appliance flue outlet. Additional drains are required for each 30' of vent. If a drain fitting is not supplied with the appliance, install an in-line drain or a tee with a drain tee cover. Properly dispose of collected condensate.
5. Multiple Category III or IV appliances may not be interconnected to any part of the venting system unless the appliance manufacturer has specifically approved the engineering of the vent system. A Category III or IV appliance may not be interconnected to any part of a vent system used with a natural draft or draft hood appliance, except when a listed mechanical draft system is installed.
6. For venting systems that extend through any zone above that on which the connected appliance is located (except for one and two family dwellings), codes require that the vent system be enclosed with an enclosure having a fire resistance rating equal to or greater than that of the floor or roof assemblies through which it passes. In one and two family residential construction the system must be enclosed whenever passing through occupied spaces. The enclosure should be fabricated to allow periodic inspection of the vent.
7. Whenever gas-fired equipment is installed in the same space where halogenated substances may exist (refrigerants, solvents, bleaches, salts, etc.), clean outside air must be utilized for combustion.
8. In cold climate areas, when passing 5' or more of vent through an unheated area (such as attics, crawl spaces, building exteriors or above roof lines), it is recommended that the system be converted to Model DGV to prevent freezing. Any penetrations of ceilings, floors, or walls must be properly fire-stopped.
9. The vent system shall not be routed into, through or within any other actively used vent or chimney.
10. Another appliance may not vent into the flue space outside the SGV/DGV conduit. However, if there is sufficient space and all manufacturer's instructions and codes are followed, a separate chimney liner may be installed within the chimney to vent another appliance.
11. Design any enclosure to permit inspection of the system.
12. Do not place any type of insulation in any required clearance spaces surrounding the vent system.
13. Seal weather exposed joints of the outer jacket of DGV with foil tape or an exterior grade silicone sealant.

Equivalent Length Table	
Fitting	**Equivalent Length**
Straight Length	1' per 1'
Tee	10'
90 Degree Elbow	10'
70 Degree Elbow	8'
45 Degree Elbow	5'
30 Degree Elbow	4'
15 Degree Elbow	3'

Table 3

Condensate Drains:

When An Internal Condensate Drain Is NOT Part of the Appliance:

- A SGV or DGV In-Line Drain Section, Tee with a separate Tee Cover Drain is strongly recommended. Install this drain fitting as close to the appliance flue collar as possible (See Fig. 3A).
- Use a Tee to transition from horizontal to vertical and attach the Drain Tee Cover to the appropriate leg of the tee (See Fig 3A).
- A condensate drain is required for every 30 feet of horizontal vent and at/near the bottom of a vertical stack.
- Use the In-Line Drain Section for a straight horizontal run. Rotate the fitting so that the drain tube points downward and is as vertical as possible (See Fig. 3B).
- A Condensate Drain Tube Kit is available to drain the condensate to an appropriate location (i.e. floor drain or vented sanitary sewer connection). A trap loop must be formed into the drain hose and must be a diameter that is at least four times the appliance's rated stack pressure in inches of water column or 3 inches, whichever is greater. Secure the loop with a cable tie. Prior to final assembly the trap loop must be 'primed' by pouring a small quantity of water into the drain hose.
- Follow all local and national codes and regulations for the draining of acidic condensate.
- In cold climates do not install a condensate drain on the exterior of the building. Doing so may result in dangerous icy conditions on surfaces near the drain and may cause damage to the vent system and/ or the building exterior. Selkirk will **NOT** be held liable for any injury or property damage due to formation of ice.

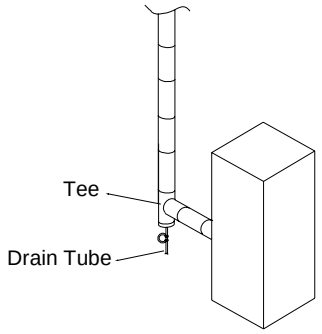


Fig. 3A (Tee w/ Drain Cover & Tube)

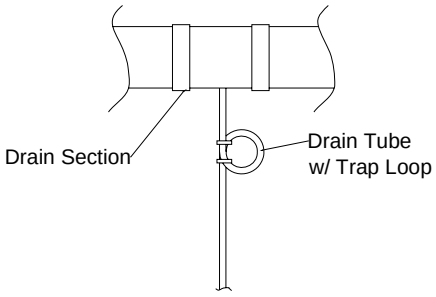


Fig. 3B (In-Line Drain Section and Drain Tube)

Vertical and Horizontal Support

For proper installation, supports must be installed per Table 4. Note: For all support options, ensure all minimum clearance to combustibles are maintained. Never drill or screw through the SGV system or the inner wall of the DGV system.

Spacing Between Supports - SGV & DGV		
Diameters	Vertical Spacing	Horizontal Spacing
3" & 4"	30'	Every six (6) feet and after every transition from vertical to horizontal

Table 4 - Vertical and Horizontal Support Requirements

Horizontal Supports - See Table 4

Models SGV & DGV must have supports for every six (6) feet of horizontal run and after every transition from vertical to horizontal. Support hangers by themselves do not maintain the necessary clearances to combustible materials; be sure to consider clearances when planning the system.

The supports must be secured to solid material using at least #10 fasteners. Do not fasten supports to drywall sheathing without using hollow wall anchors. The conduit supports must maintain the 1/4" per foot pitch to avoid collection of condensate in the vent. Position the vent so that the welded seam is on the top.

VENT ROUTING CONSIDERATIONS - TERMINATION LOCATIONS

Horizontal Termination Requirements:

1. The horizontal vent connector must slope ***upward*** toward the termination at least 1/4 inch per foot and be installed so that all condensate runs back toward the appliance and is not retained in any part of the venting system. EXCEPTION: If the system is connected to positive pressure (Category III or IV) appliances only, terminates with a horizontal termination, and has no provision for draining condensation and/or rain water; then the vent must pitch ***downward*** toward the termination. This pitch must also be at least 1/4 inch per foot (2 degrees).

2. The vent system must terminate with one of the SGV terminations or other terminations as specified or provided by the appliance manufacturer, or approved mechanical vent devices.

3 The Termination Location (Figure 4):

(a) The vent must terminate at least 3 feet above any forced air inlet located within 10 feet.

(b) The vent must terminate at least 4 feet below, 4 feet horizontally from or 1 foot above AND 2 feet horizontally from any door, window or gravity air inlet into any building. Exception: Direct Vent appliances may be listed for alternate spacing.

(c) The vent termination must be at least 12 inches above grade or, in geographical areas where snow accumulates, at least 12 inches above the anticipated snow line.

(d) Through-the-wall vents for Category II and IV appliances and noncategorized condensing appliances must terminate a minimum of 7'over any public walkway and driveway or an area where condensate or vapors could create a nuisance or hazard or could be detrimental to the operation of regulators, relief valves or other equipment. In colder climates where ice buildup is likely to occur, Selkirk will ***NOT*** be held liable for any personal injury or property damage due to any formation of ice.

(e) The vent termination must be at least 8 feet horizontally from any combustion air intake, located above it.

4. Horizontal supports are required for every 6 feet of horizontal run and after every transition from vertical to horizontal.

5. The total continuous distance of the vent system from the appliance flue collar to the termination must not exceed that specified in the appliance manufacturer's installation instructions. When venting natural draft appliances the termination must be at least 5 feet above the topmost draft hood, otherwise a Listed mechanical draft inducing device may be required.

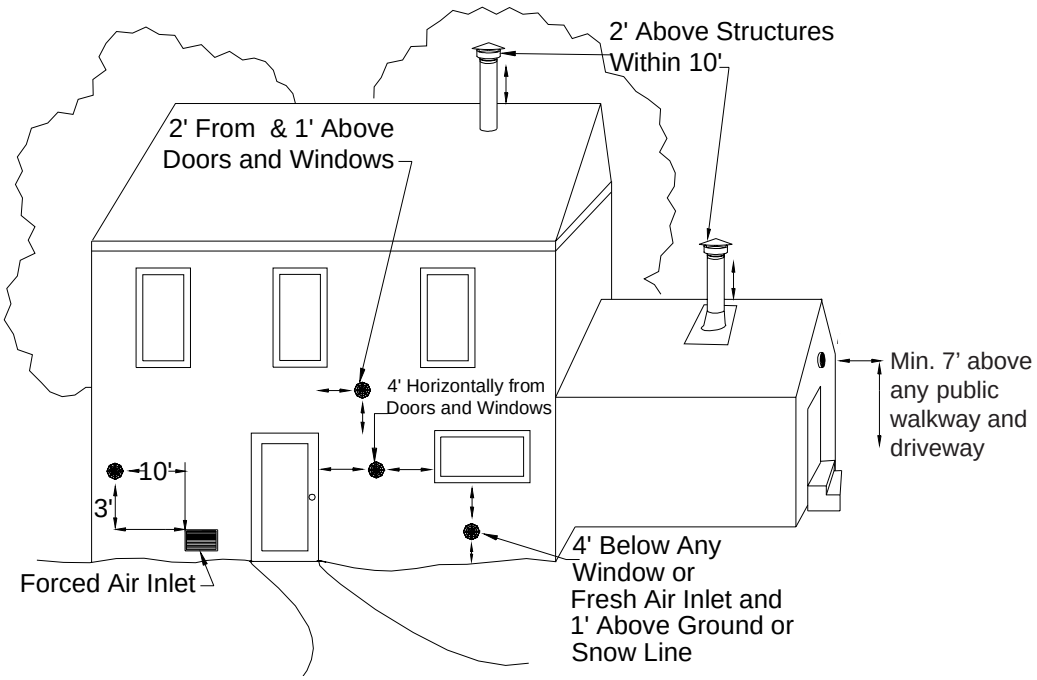


Fig. 4 - SGV/DGV Termination Locations

Vertical Installation Requirements:

1. The vent system must terminate at least 3 feet above the roof line and at least 2 feet higher than any portion of the building within 10 feet.

2. When terminated at a height of more than 6 feet above the roof the stack must be supported. The vent should be supported every 10 feet.

3. The vent system must terminate with one of the SGV/DGV Vent Terminations;

Exceptions:
(a) Category I or III appliances (natural draft) must use a SGV Rain Cap.

(b) Terminations or approved mechanical vent devices specified or provided by the appliance manufacturer are permitted.

4. The total continuous distance of the vent system from the appliance flue collar to the termination shall not exceed that specified in the appliance manufacturer's installation instructions. When venting natural draft appliances the termination must be at least 5 feet above the topmost draft hood. Otherwise a Listed mechanical draft inducing device is required.

5. In cold climates do not install a condensate drain on the exterior of the building. Doing so may result in dangerous icy conditions on surfaces near the drain and may cause damage to the vent system and/or the building exterior. Selkirk will ***NOT*** be held liable for any personal injury or property damage due to any formation of ice.

6. Install supports every 10 feet vertically along the vent pipe route. Vertical supports are required after every transition to vertical and are required after every offset elbow. When the vent is free standing and penetrates a roof/ceiling another means of support must be used at a second location. Refer to the Vertical Supports section in this manual.

SGV - INSTALLATION REQUIREMENTS AND COMPONENTS

JOINT SEALING AND CONNECTION METHOD

Model SGV (Diameters 3" & 4") is manufactured with a factory installed seal on the inside of the female (outlet) end making the use of any additional sealant unnecessary.

Connection

Note: When provided, apply lubricant to the SGV seal to improve ease of installation before connecting parts. Before joining the sections or fittings together, use an alcohol pad to wipe the joint area of both ends of the inner pipe. This will remove any foreign matter which may affect the integrity of the seal.

Connect parts using the method shown in Fig 5.
(a) To connect, engage the two sections together, male end into the female end.
(b) After the sections are fully engaged, tighten the hose clamp until it can no longer be turned by hand.
(c) The joint is now sealed and secured.

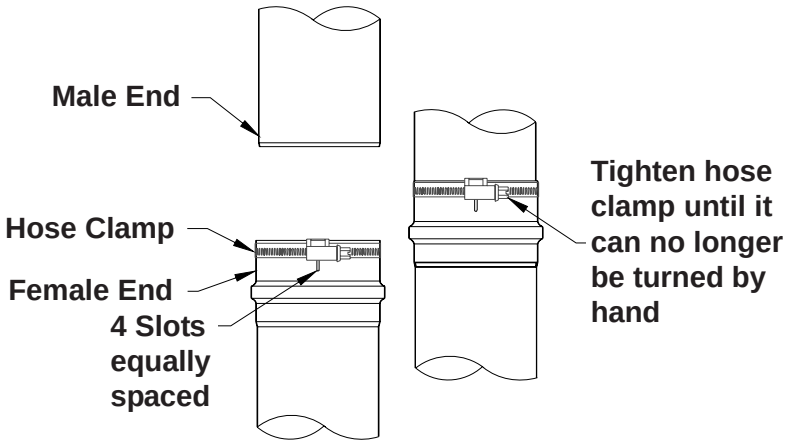
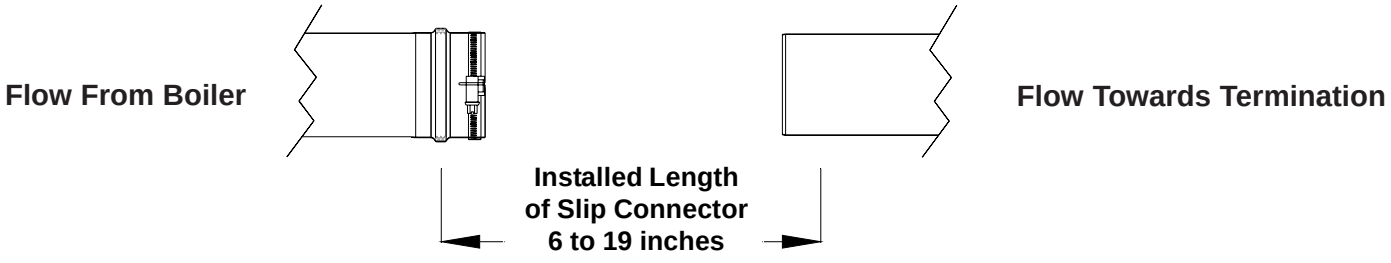


Fig. 5 - SGV Joint Assembly

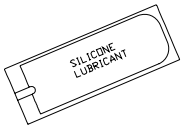
SLIP CONNECTOR

SGV Slip Connector serves as an adjustable length section and eliminates the need to cut parts to length. The Slip Connector can have an installed length from 6 to 20 inches. It works best in conjunction with another SGV straight length. When used with an elbow or a tee, do not insert the Slip Connector so far that air flow within the vent becomes obstructed.



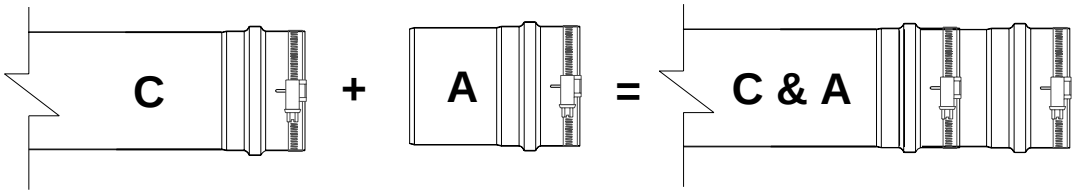
The Slip Connector has three components, (from left, a Male Connector (A), Slip Section (B) and a packet of silicone lubricant.

Step 1 : Before assembling the Slip Section (B) to the Male Connector (A), lightly moisten both gaskets with the silicone provided. Oil-based lubricants are not recommended.

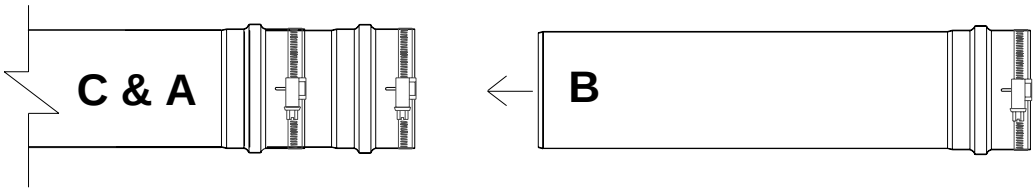


Silicone Lubricant

Step 2 : Install the Male Connector (A) into the female end of the previous section (C). Make this joint by following the standard assembly procedure.

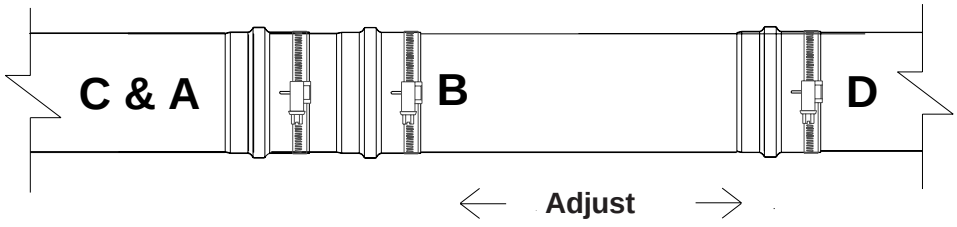


Step 3 : Slide the Slip Section (B) through the Male Connector (A) previously installed with Section (C)

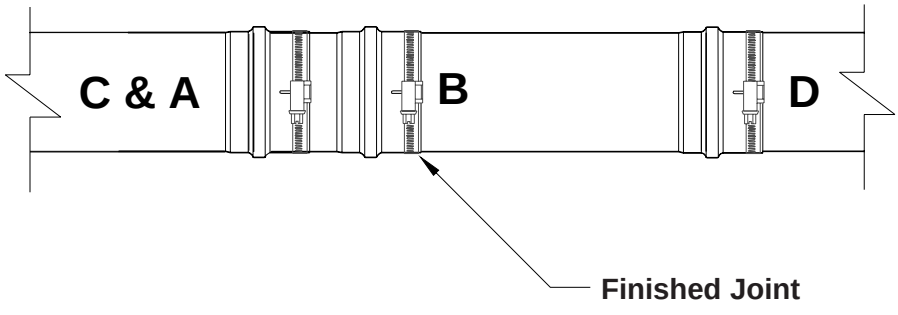


Step 4 : Install the male end of the next section (D) into the female end of the Slip Section (B).

Step 5 : Adjust the Slip Assembly (B+D) as desired, into place.



Step 6 : Use standard assembly procedure to secure the joint.



CUSTOMIZED LENGTHS

Cutting Standard Lengths

The SGV system is designed so that in most cases standard lengths will not need to be cut. There may arise, however, an occasional situation where standard lengths and adjustable length slip connectors are not adequate. In such cases, a standard SGV length may be field cut.

To custom cut a standard length part:

1. Measure the length of vent needed (Dim A) and add 4 inches to the result.
2. Measuring from the female end (end with the hose clamp) measure out the distance A + 4" and mark it on the pipe.
3. Cut the pipe with an abrasive cutoff, plasma, or compound snips. To help get a square cut, create a straightedge by wrapping masking tape around the waste side of the cut point. If using snips, start the cut at the male end and follow a spiral path around the pipe until the cutoff mark is reached.
4. File off any burrs that develop in the cutting process prior to assembling. If the cutting process distorts the roundness of the pipe carefully use your thumbs to re-round the end.
5. Assemble the joint using the procedures above.

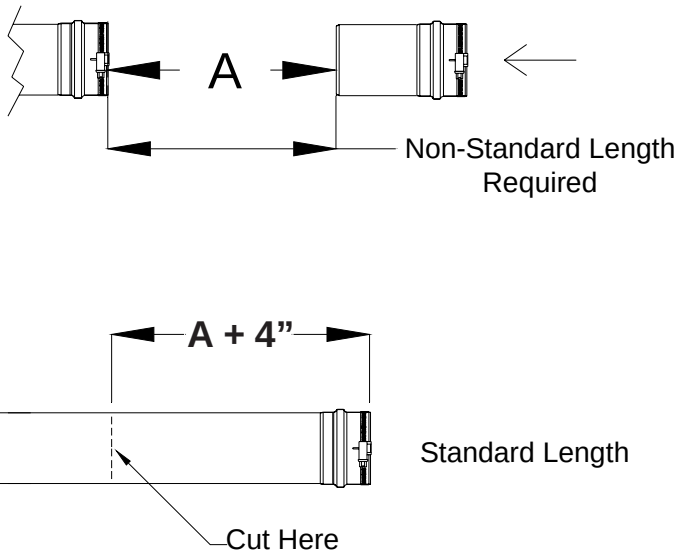


Fig. 7 - SGV (Cutting of Standard Lengths)

VERTICAL SUPPORT (9_VSL):

Vertical support legs can be used above or below a structure for support (See Fig. 8). The legs can be cut to shorter lengths if necessary. To install, slide the support clamp over the end of the vent section, leaving the clamp loose. Position the support legs and install 2 screws through each leg into the structure. Tighten the clamp around the vent pipe. Use Part Number 4_27SS and cables for taller installation (see Fig. 10).

FIRE STOP/SUPPORT

Wherever the SGV passes through a ceiling or floor a Fire Stop must be installed. When used in conjunction with a pair of support clamps, the Fire Stop also provides vertical support. See Table 4 for minimum spacing distances for supports. To Install: Establish the correct framing dimension (See Table 2) and nail the Fire Stop to the joist. Route the vent through the Fire Stop plate. If using as a support, clamp the Support Clamps around the vent. Adjust clamps so that they rest on the top side of the Fire Stop and tighten the Support Clamps to secure the vent (See Fig 8). A Trim Plate may be used to close off the lower half of the framed opening. See section on Trim Plate for proper installation instructions. Caution about insulation in attics – Note: When installing a Fire Stop in the attic, the Fire Stop should be located on the top of the joist to prevent insulation from falling into the joist. **Keep all attic insulation the proper minimum clearance from pipe** by installing an enclosure or similar around the pipe.

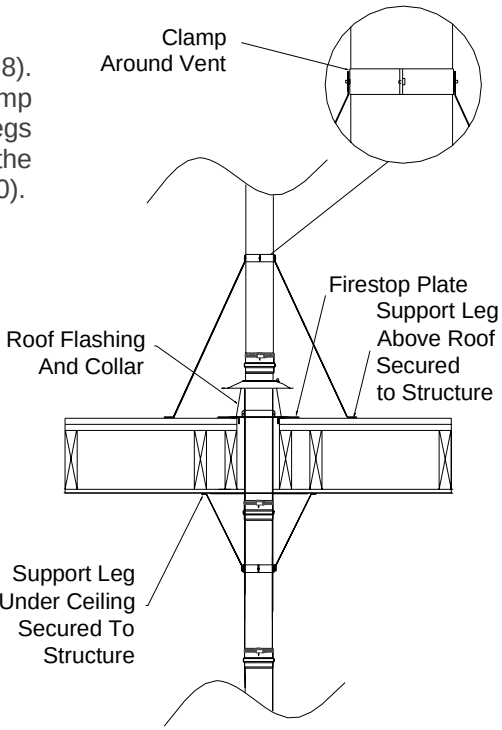


Fig. 8 - SGV Vertical Support

SUPPORT CLAMPS

Support Clamps may be suspended from rods or cables and used as a saddle to rest the vent in or they may be used in pairs to clamp around the vent and suspended from a single rod, cable or Fire Stop (See Fig. 10).

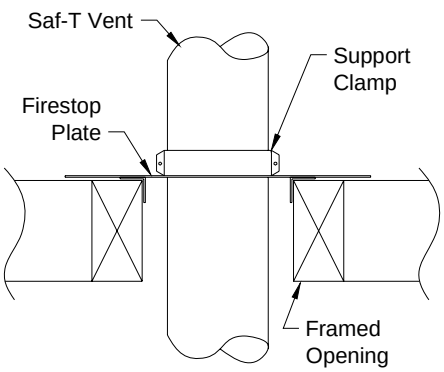


Fig. 9 - SGV Fire Stop/Support

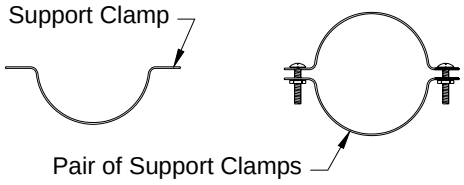


Fig. 10 - SGV Support Clamp

2" CLEARANCE HORIZONTAL SUPPORT

The 2" Clearance Horizontal Support provides horizontal support for the vent and maintains a minimum of 2" of clearance to the wall. To install: Secure the mounting plate to the wall by installing fasteners through the pilot holes in the mounting plate, and into the wall. Install a pair of Support Clamps around the vent, and secure the Support Clamp to the Horizontal support by installing a bolt through the mounting tabs on the Support Clamps and through the pilot hole in the 2" Horizontal Support (See Fig. 11).

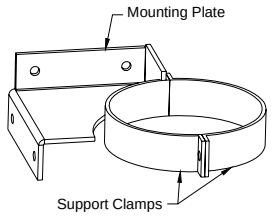


Fig. 11 - SGV 2" Clearance

1" CLEARANCE SUPPORT

The 1" Clearance Support provides horizontal and/or vertical support for the vent and maintains a minimum of 1" air clearance. To Install: Secure the 1" Clearance Support to the wall or ceiling by installing screws through the mounting plate and into the mounting surface. Route the vent through the adjustable clamps and secure by tightening the Worm Gears (See Fig. 12).

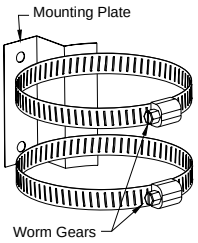


Fig. 12 - SGV 1" Clearance

FLASHINGS

The flashing for SGV should be installed where the vent pipe passes through a roof and is used to seal the opening in the roof from the outside. The flashing should be located so that the vent is vertical and proper clearance is maintained as the vent passes through the roof.

Once located, each corner of the base flange should be nailed to the roof.

The low end portion of the base should be installed on top of the roofing material. The upper end of the flashing base should be nailed to the roof and roofing material should cover over the upper part and sides of the flashing base (See Fig. 13).

STORM COLLAR

The SGV Storm Collar is designed to shed rain away from the flashing opening. To install, place the Storm Collar over the last segment of vent and slide it down to where it contacts the flashing. Depending on the type of storm collar you have, tighten the worm gear or the bolts on the tab to secure the Storm Collar to the vent. Apply silicone sealant over the joint between the vent pipe and the Storm Collar (see Fig. 13).

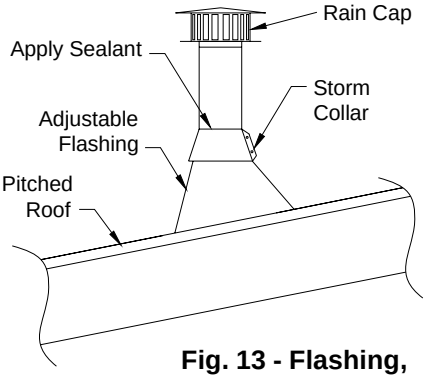


Fig. 13 - Flashing, Storm Collar & Cap

WALL THIMBLE

The Wall Thimble is used for passing the SGV through combustible interior or exterior walls (See Figs. 14 & 15).

To Install:

1. Prepare a square or round opening in the wall. Refer to Table 2 to for proper hole size.
2. Select one half of the Wall Thimble and position it so the shield extends into the wall section.
3. From the opposite side of the wall, position the other half of the wall thimble so that the shield extends into the wall and engages with the other half of the Wall Thimble. Note: The thimble shields must overlap a minimum of 1". If the wall is thicker than 6", the shields may be extended by using a piece of 6" Diameter galvanized pipe.
4. Apply silicone sealant to seal the trim plate to the wall surface.
5. Use 4 #10x1-1/4" wood screws to secure the Wall Thimble to the wall.
6. Route the vent through the opening in the Wall Thimble and seal the annular space between the vent and Thimble with silicone sealant.
7. The Wall Thimble Assembly may be painted to match the wall décor.

NOTE: Model DGV does not require a Wall Thimble to pass through a combustible wall.

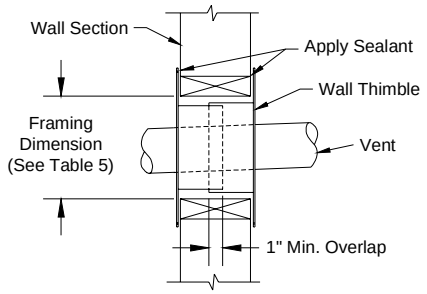


Fig. 14 - Wall Thimble

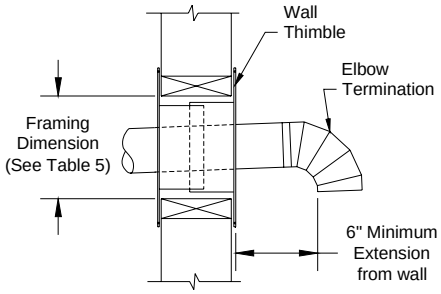


Fig. 15 - Wall Thimble/Elbow Termination

RAIN CAPS

The Rain Cap terminates the vent system and prevents rain from entering the vent. Refer to Vertical Termination Requirements section for guidelines for locating the Rain Cap.

To Install: Once the proper height and clearance is established, the Rain Cap connects to the vent pipe via standard the same hose clamp connection method (See Fig. 16).

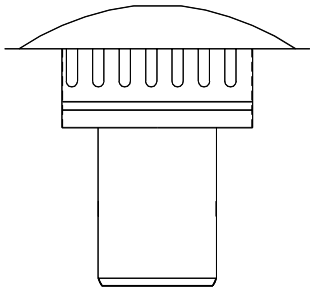


Fig. 16 - Rain Cap Exhaust Termination

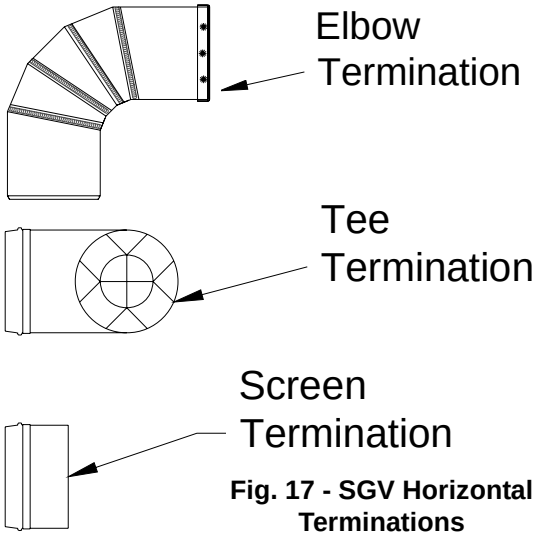


Fig. 17 - SGV Horizontal Terminations

Horizontal Termination

The Horizontal Termination is used to terminate a horizontal vent system. There are several different Horizontal Termination styles available. These include the Termination Screen, an Elbow Termination and a Screen Termination. All Horizontal Terminations install the same way by connecting them to the vent pipe via standard hose clamp Connection method. (See Fig.17).

DGV - INSTALLATION REQUIREMENTS

JOINT SEALING AND CONNECTION METHOD

1. Install the system with the female ends (ends with the red seal) pointing away from the appliance.

Note: When provided, apply lubricant to the DGV seal to improve ease of installation before connecting parts. Before joining the sections or fittings together, use an alcohol pad to wipe the joint area of both ends of the inner pipe. This will remove any foreign matter which may affect the integrity of the seal.

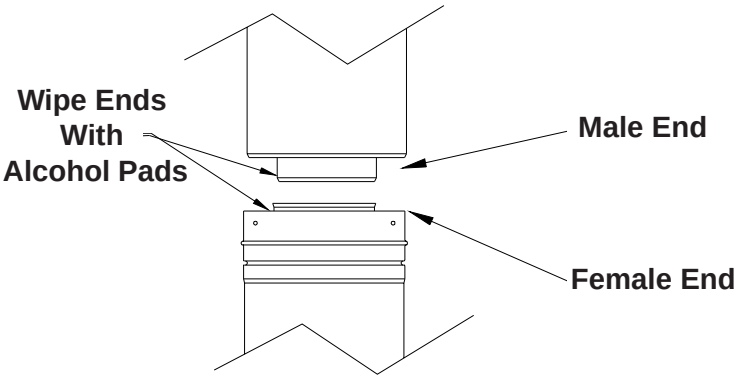
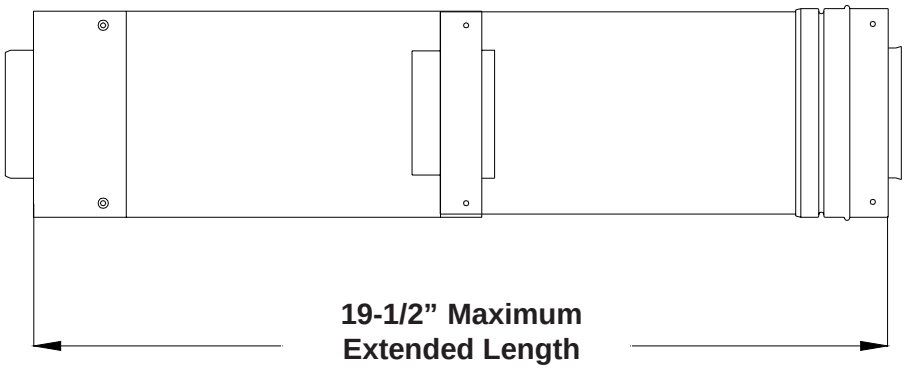


Fig. 18 - DGV Joint Assembly

DGV - ADJUSTABLE SECTION

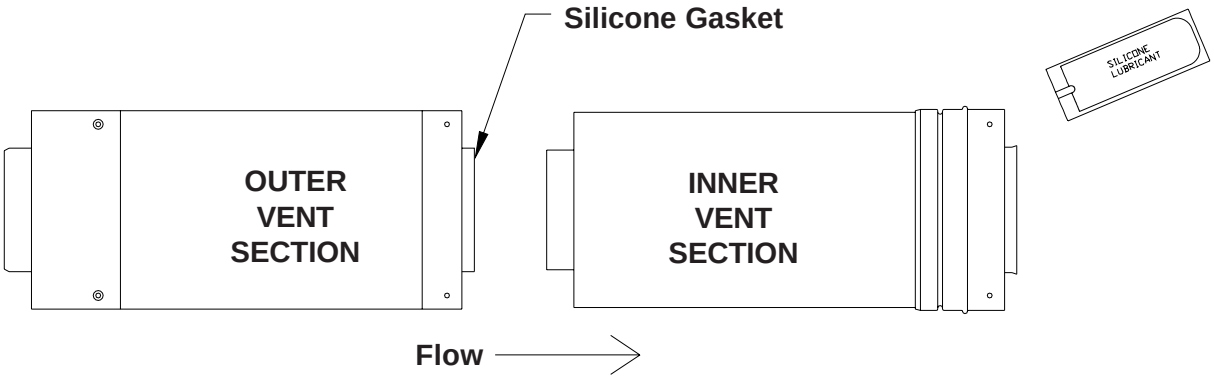
The DGC Adjustable Section serves as a variable length between other components when specific lengths cannot be utilized. The installed length is 12-1/2" to a maximum of 19-1/2".



Installation Procedure

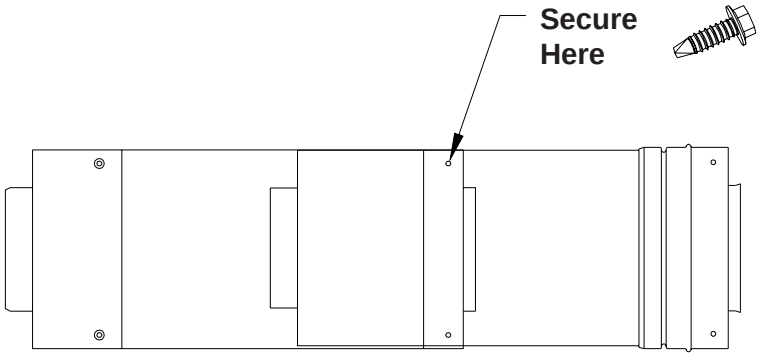
The Adjustable assembly consists of the female Inner Vent, the male Outer Vent, a packet of self tapping screws, an alcohol pad, and a packet of silicone lubricant.

Step 1 : Before assembling, lightly moisten both gaskets in the Outer Vent section with the silicone provided.



Step 2 : Slide the Inner Vent into the Outer Vent to the desired overall length.

Step 3 : Connect the 2 sections at the holes in the outer jacket. Use the self tapping screws provided. If using a variable torque drill, use a low torque setting to install the screws, as to not strip out the holes. Do not apply pressure on the drill when installing screws.



Step 4 : Use appropriate supports where needed. Proceed with the remaining installation.

CUSTOMIZED LENGTHS

Cutting Standard Lengths

If a custom length of DGV is necessary, a standard vent section can be cut.

1. Measure the distance of the length required, taking the measurement from the end of one of the outer jackets to the beginning of the other outer jacket on the section to connect to, (A to B on diagram of Figure 19A).

2. Select a section that is longer than the required length.

3. Add **2"** to the distance measured previously for the cut length of the **outer** jacket. Mark a cut line on the outer jacket on the male end (the end without holes in it as per Figure 19B).

4. An effective way of marking is to run a length of tape around the section, assuring a square cut.

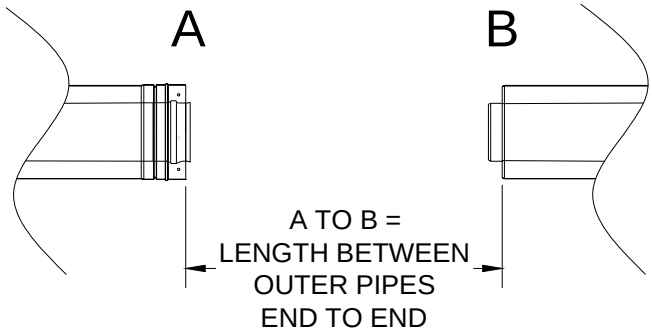


Fig. 19A - DGV - Measuring required Length

5. Add **3"** to the distance measured previously for the cut length of the **inner** vent pipe. Mark a cut line on the inner vent on the male end (the end without the red seal as per Figure 19C).
The inner pipe is always cut 1" longer than the outer pipe

6. **WEAR GLOVES,** as cut ends are very sharp. Cut the pipes with an abrasive cutoff saw, plasma cutter, or compound snips. If using snips, start the cut at the male end and follow a spiral path around the pipe until the cutoff mark is reached. File off any burrs or rough edges that develop in the cutting process, and clean off any dust or grit. Before joining the sections or fittings together, use an alcohol pad to wipe the joint area of both ends of the inner pipe.

NOTE: If the cutting process distorts the roundness of the pipes, carefully use your thumbs to re-round the ends.

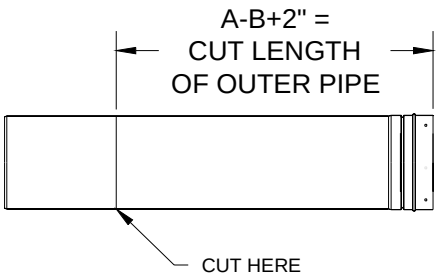


Fig. 19B - DGV - A&B+2"

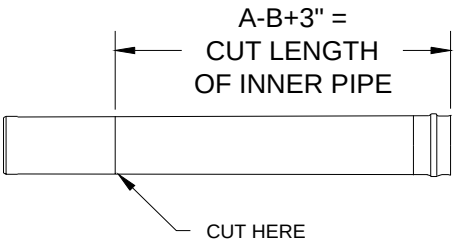


Fig. 19C - DGV Cutting of Length

APPLIANCE CONNECTION

• Install the appliance adapter onto the appliance outlet, placing the end with the red seal away from the appliance. Secure the adapter onto the outlet collar using the three self-tapping screws provided. Follow the DGV joint assembly instructions.

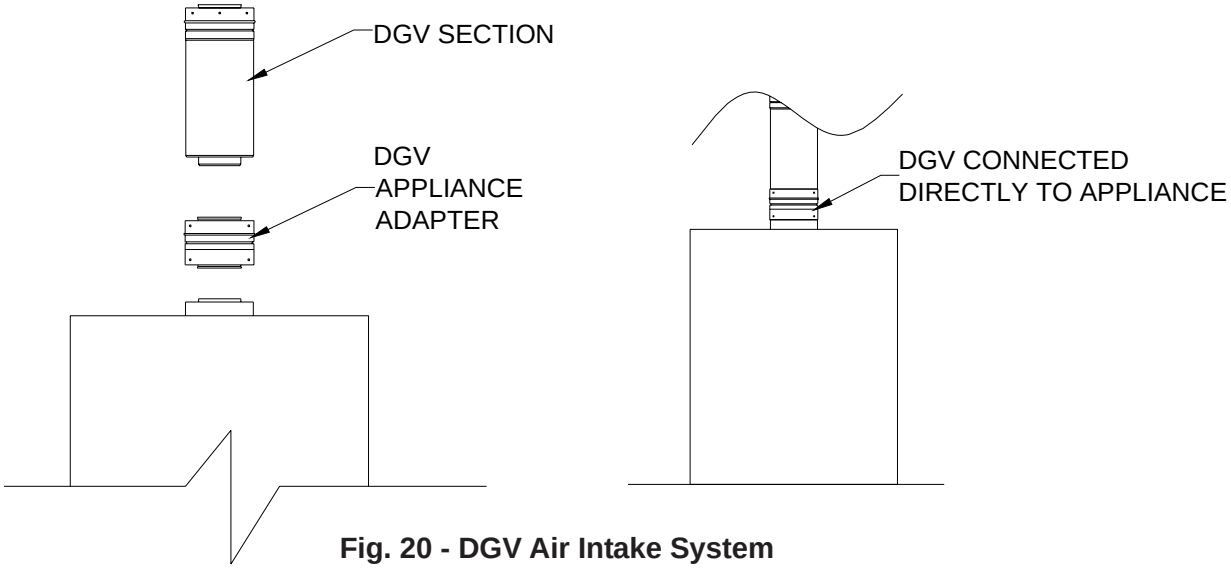


Fig. 20 - DGV Air Intake System
With Appliance Adapter for Connection

ADAPTING MODEL SGV to DGV:

An adapter (DGV0_ADSGV) is used to connect DGV to SGV and to appliance adapters and flue collars.

• Insert the male end of the DGV adapter into the female end of the SGV vent section and complete the connection by tightening the hose clamp on the SGV vent section. connection.

• Begin the DGV system by inserting the male end of the DGV section into the female end of the adapter. Secure the joint as described elsewhere in this manual.

• ***WARNING***: The openings in the vent adapter must be kept uncovered and unobstructed to prevent the risk of fire.

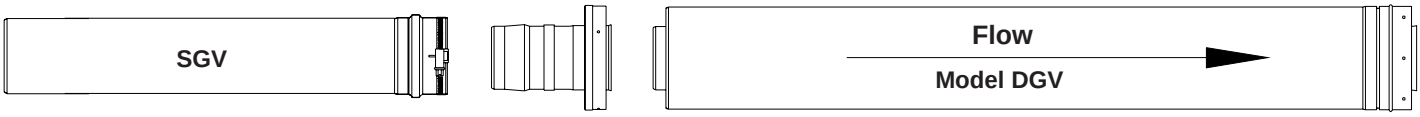


Fig. 21 - DGV Adapter

Installation:

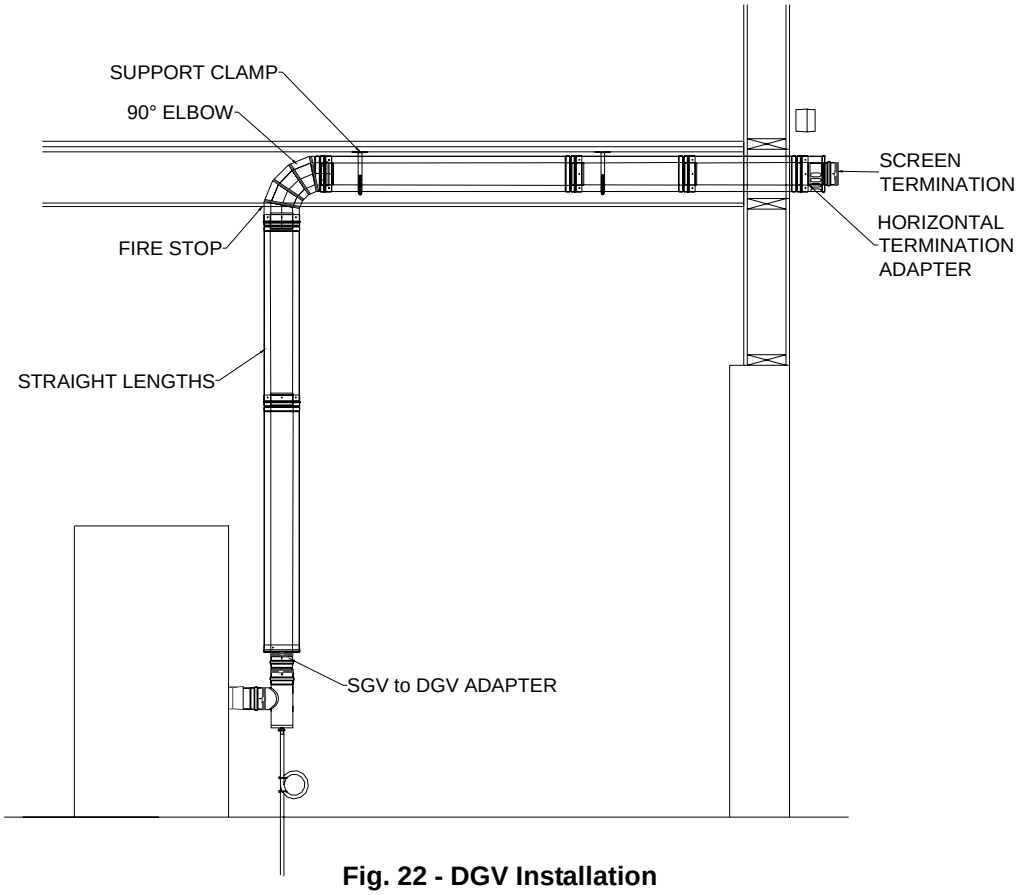


Fig. 22 - DGV Installation

AIR INTAKE CONNECTIONS FOR DIRECT VENT AND SEALED COMBUSTION APPLIANCES*:

- ***WARNING***: This application must be approved by the Appliance Manufact

The Air Intake Tee may be used on approved direct vent and sealed combustion applia that have separate (non-concentric) air intake and flue exhaust collars. The male end c tee connects to SGV and the tee takeoff/snout connects to the appliance air in

- Insert the male end of the Air Intake Tee into the female end of the SGV vent section and secure f SGV connection method.
- Insert the male end of the next DGV section into the female end of the Air Intake Tee and se described elsewhere in this manual.
- Connect the tee takeoff to the appliance combustion air inlet using appropriate hose or pipe.
- ***WARNING***: If not attached to an appliance's air intake, the opening in the Air Intake Tee must be ke uncovered and unobstructed to prevent the risk of fire.

* Direct Vent Appliances are constructed and installed so that all air for combustion is supplied directly from the outside atmosphere. The passageway for the combustion air is allowed a small amount of leakage in the building environment. No special installation considerations are required to use DGV on Direct Vent appliances unless specified by the appliance manufacturer. Sealed Combustion appliances are similar to Direct Vent except the combustion air passage must be sealed to prevent leakage within the building envelope. When DGV is used on approved Sealed Combustion appliances the joints of the outer jacket must be sealed with a foil tape (example: 3M 425), or approved silicone sealant (example: Dow Corning 732).

Fig. 23 - Air Intake Tee

0" CLEARANCE SUPPORT CLAMP: Attach the bracket to the structure but do not tighten in place. Open the hose clamp and slip it under the support bracket. Position the clamp between the mounting screws and rotate the clamp so that the screw housing will be accessible after the vent is installed. Restart the threads on the hose clamp and securely tighten the mounting screws to the structure. This can also be installed vertically (see Figures 24 & 25).

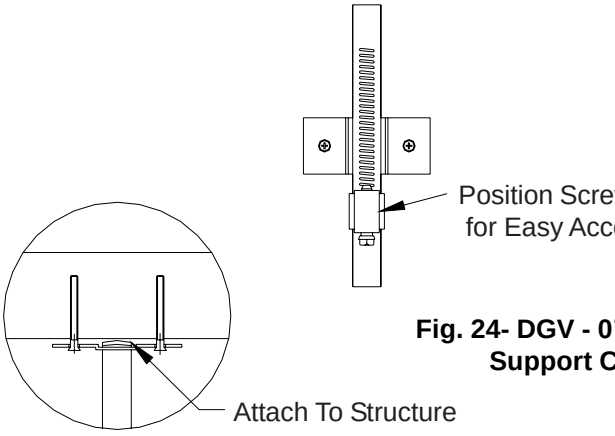


Fig. 24- DGV - 0"Clearance Support Clamp

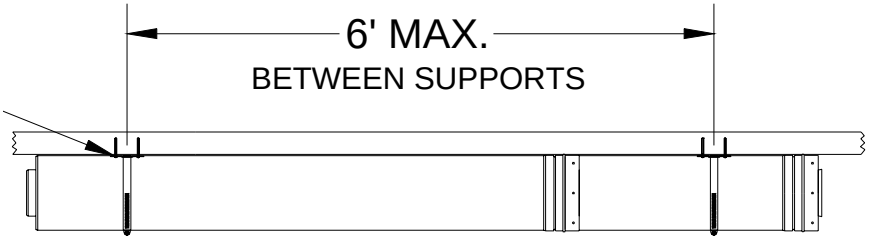


Fig. 25 - DGV - 0"Clearance Support Positioning

1" CLEARANCE SUPPORT CLAMP: Supports the vent at 1 inch clearance to the structure. Line up the support mounting brackets so that the mounting screws will follow the center line of the vent section (see Figures 26 & 27). This can also be installed vertically.

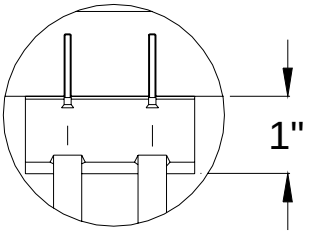


Fig. 26 - DGV - 1" Clearance Support Clamp

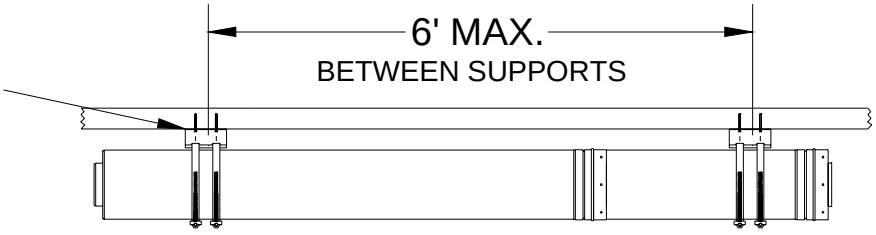


Fig. 27 - DGV - 1" Clearance Support Positioning

SUPPORT CLAMP: Support clamps are sold in pairs and can be clamped around the vent and suspended from a rod or cable. They can be used singularly as a saddle clamp to rest the vent in and suspended from two rods or cables.

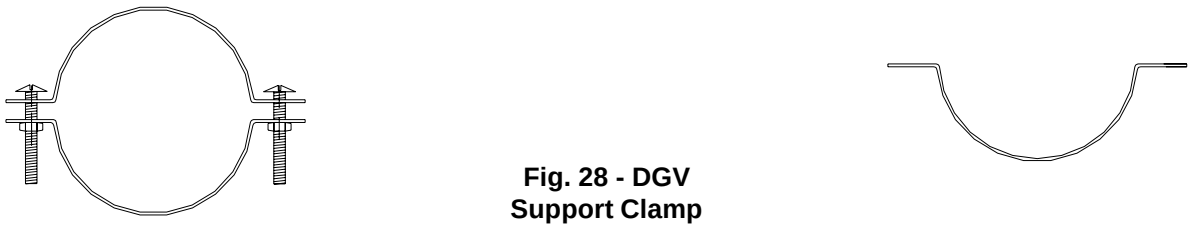


Fig. 28 - DGV Support Clamp

SUPPORT LEGS ROTATED HORIZONTALLY: Support legs can be used on horizontal runs by rotating the clamp at the rivet connection (see Figure 29). The legs can be cut to shorter lengths if necessary.

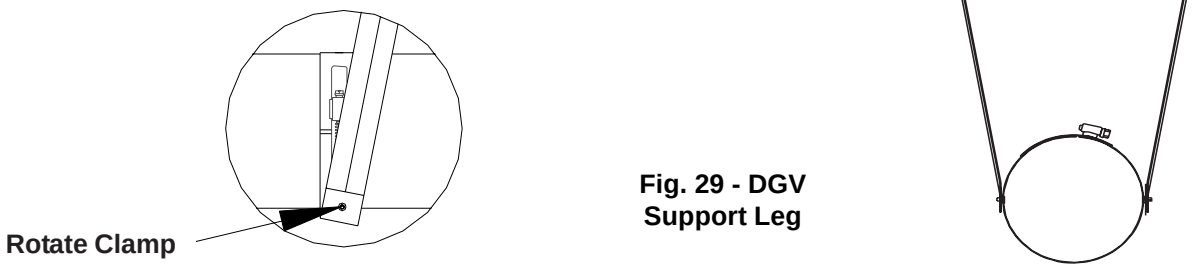
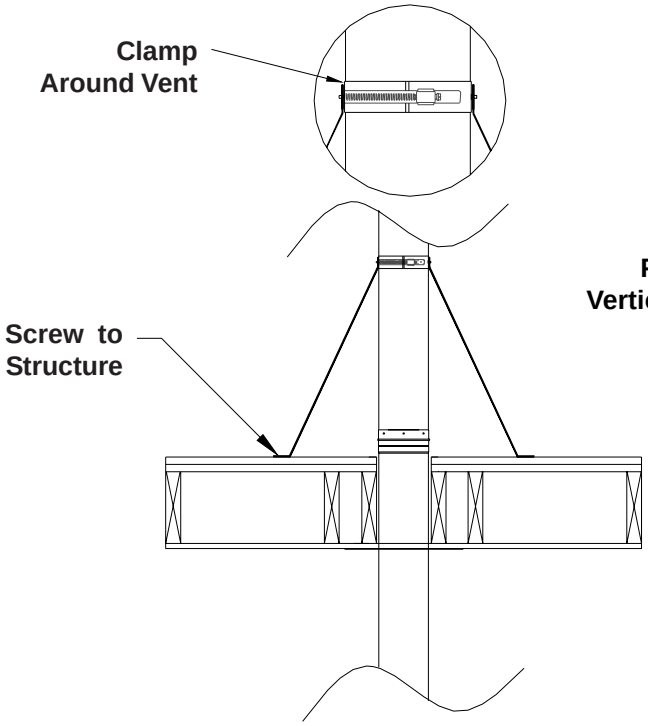


Fig. 29 - DGV Support Leg

VERTICAL SUPPORTS, (SC0_ _VSL):

Vertical support legs can be used above or below a structure for support. To install, slide the support clamp over the end of the vent section, leaving the clamp loose. Position the support legs and install 2 screws through each leg into the structure. Tighten the clamp around vent pipe. The legs can be cut to shorter lengths if necessary and can rotate around the support clamp at the rivet connection. By rotating the clamp to a horizontal position the support legs can be used on horizontal runs.



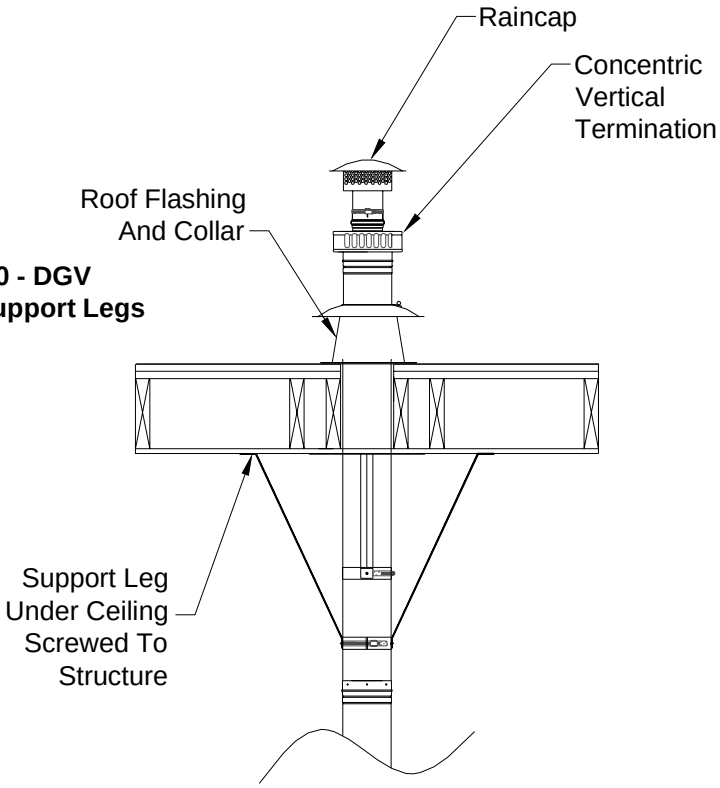


Fig. 30 - DGV Vertical Support Legs

FIRE STOP/WALL THIMBLE/SUPPORT, (SC0 _FS):

•To use as a Wall Thimble prepare an opening according to Table 2 on page 4. Remove any insulation from the opening, using additional framing if necessary (see Figure 31). Attach the plate over the center of the opening using appropriate fasteners (see Figure 32).

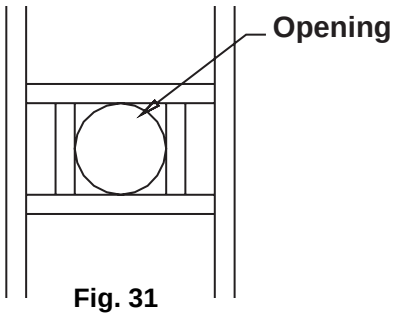


Fig. 31
Prepare opening

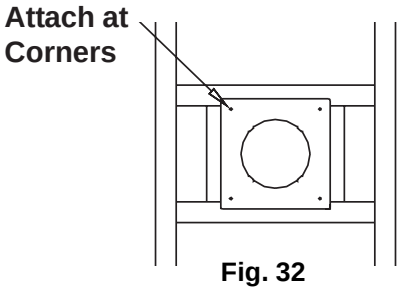


Fig. 32
Attach Plate

• Install the vent section through the thimble plate and secure the section to the thimble by screwing the self-tapping screws through the holes in the tabs on the plate (see Figure 33) and into the outer wall of the vent . Apply silicone sealant around the vent section where it passes through the plate and around the plate where it is attached to the structure.

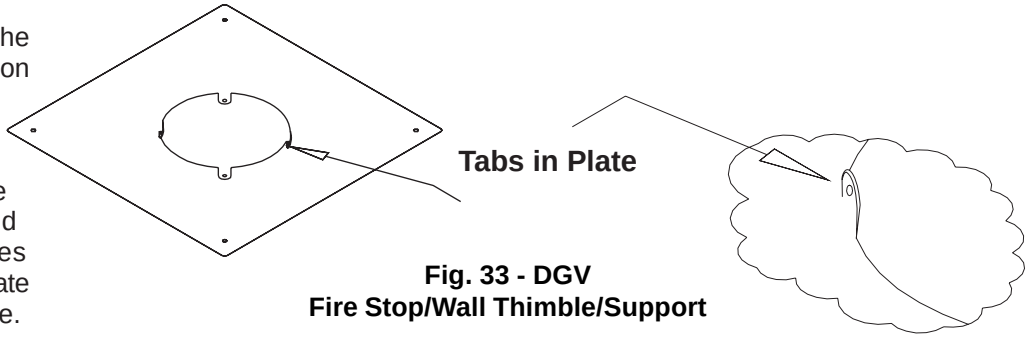


Fig. 33 - DGV
Fire Stop/Wall Thimble/Support

• To use as a Firestop before passing through ceilings or enclosed chases, prepare a round or square opening 1/4" larger than the outer jacket (5 1/4" for 3" vent or 7 1/4" for 4" vent). Remove any insulation from the opening. Secure the firestop to the structure at the 4 corners. Install the vent section through the firestop and secure the section to the thimble by screwing the self-tapping screws through the holes in the tabs on plate and into outer wall of the vent. This method can also be used to support the vent section either vertically or horizontally.

FLASHINGS

The flashing for DGV should be installed where the vent pipe passes through a roof and is used to seal the opening in the roof from the outside. The flashing should be located so that the vent is vertical and proper clearance is maintained as the vent passes through the roof.

Once located, each corner of the base flange should be nailed to the roof.

The low end portion of the base should be installed on top of the roofing material. The upper end of the flashing base should be nailed to the roof and roofing material should cover over the upper part and sides of the flashing base (See Fig. 34).

STORM COLLAR

The DGV Storm Collar is designed to shed rain away from the flashing opening. To install, place the Storm Collar over the last segment of vent and slide it down to where it contacts the flashing. Depending on the type of storm collar you have, tighten the worm gear or the bolts on the tab to secure the Storm Collar to the vent. Apply silicone sealant over the joint between the vent pipe and the Storm Collar (see Fig. 34).

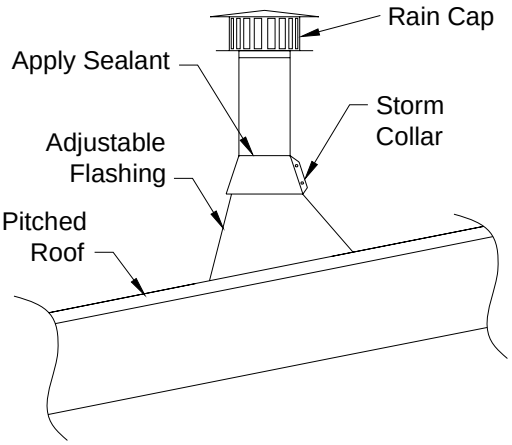
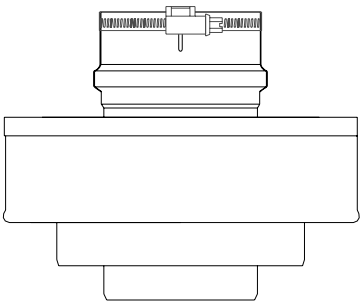


Fig. 34 - Flashing,
Storm Collar & Cap

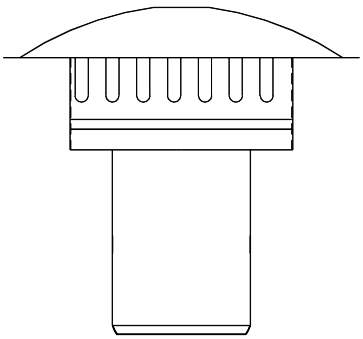
VERTICAL TERMINATION, (DGV0_VT):

Install the vertical termination adapter into the last vent section and secure with the 3 self-tapping screws provided. Attach a rain cap or other appropriate SGV exhaust termination to the end of the vertical termination adapter. If the exhaust termination needs to be extended, a section of SGV can be connected directly to the vertical termination adapter. ***Seal weather exposed joints of the outer jacket with foil tape or an exterior grade silicone sealant.*** To allow for inspection of the system, do not seal the exhaust termination.



Termination Adapter

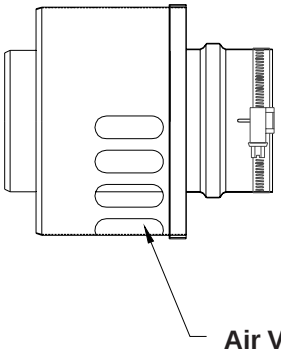
Fig. 35 - SDV/DGV Termination
Adapter and Rain Cap



Rain Cap
Exhaust Termination

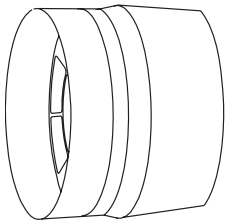
HORIZONTAL TERMINATION, (DGV0_HT)

• Install the DGV horizontal termination adapter, into the last vent section with the air vent openings facing downward. Secure the adapter to the vent section with the 3 self-tapping screws provided. Attach SGV/DGV termination to the end of the horizontal termination adapter.



DGV Horizontal Termination Adapter

Fig. 36 - DGV Horizontal Termination



Screened Termination

APPLIANCE CONNECTORS - SGV and DGV

Connect the SGV system to the appliance flue collar as directed in the appliance manufacturer's instructions. If the appliance flue collar is not designed for direct connection to the SGV system, a special appliance adapter may be required. See Heat-Fab Dimensional Chart, the appliance manufacturer's instructions or contact Heat-Fab for recommended adapters.

MAINTENANCE PROCEDURES:

• Normal operation of gas fired appliances does not result in deposits of combustible soot in venting systems. However, a poorly adjusted or malfunctioning appliance can deposit soot and other debris which can enter the vent system. As with all vents, the SGV/DGV systems should be inspected at least annually for the presence of deposits of soot or debris. Any such accumulation should be removed and the appliances adjusted to eliminate future accumulation.

• The system should also be inspected at least annually for signs of leakage of condensate or combustion by-products at all joints. If any leakage is found the connected appliances should be turned off and the leaks repaired.

• If the system incorporates a drain hose from either an in-line fitting or from a drain tee then the hose must be inspected periodically to assure that water remains in the trap loop. If a proper trap loop is not maintained exhaust from the connected appliances may accumulate in the building area.

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